Claims 1-37 and 45-79 stand rejected under 35 U.S.C. § 102 or under 35 U.S.C. § 103 over U.S. Patent No. 5,902,997 to Kropp et al. (Kropp), U.S. Patent No. 5,155,401 to Kenaya, et al. (Kenaya) or U.S. Patent No. 5,753,908 to Christensen (Christensen) or based on a combination of the above references.

Applicants have amended some claims to clarify and better set forth the invention, have added claims, and believe the application is now in condition for allowance. The amendments presented herein were not presented earlier since it was believed that the claims presented previously placed the application in condition for allowance.

Preliminarily, applicants respectfully request that the examiner withdraw the finality of the July 10, 2001 office action. The designation of the July 10, 2001 office action as a "final" office action was improper because the examiner relied on two newly cited references--Kenaya and Christensen--in rendering the action. The examiner is precluded from designating an office action as "final" when relying on new references. The only exception to this rule is where the new claims are presented were not reasonably foreseeable (MPEP 706.07(a)). The new claims of applicants, namely claims 45-79 were foreseeable. Note that claims 45-79 are entirely supported by the summary of the invention section of the specification in connection with the drawings without even a reference to the detailed description. Thus, the presentation of claims 45-79 could have been anticipated by the examiner by a casual leafing through the summary and drawing section of the specification.

Regarding independent claims 1, 13, 26, 32, and 46, applicants have amended these claims so that the claims clarify and better set forth the invention. Namely, in claim 1 there is recited the element that there is no contacting between the optical and imaging subassemblies which prevents free movement in the x and y directions between the subassemblies prior to soldering. In claim 13, there is now recited the element that the image sensor and optical subassemblies can be moved freely relative to one another in at least either of an x or y direction prior to soldering. In claim 46, applicants recite a method wherein an optical image sensor subassemblies are moved relative to one another without contact in a manner that would prevent free movement of the subassemblies in at least the x and y directions.

In claim 26, applicants recite an image sensor subassembly comprising a

solderable surface of a configuration s lected from the group consisting of a through-hole, a substantially uniform-diametered pin, or a threaded screw. Similarly, in claim 32 applicants recite an optical subassembly comprising a solderable surface of a configuration selected from the group consisting of a through-hole, a substantially uniform-diametered pin, or a threaded screw. Claims 26 and 32 were previously rejected over Kropp. However, the skilled artisan would not be motivated to incorporate any of the recited solderable surface configurations in the Kropp system.

A primary objective of Kropp is to tightly control the z-direction spacing distance B between component 40 and lens assembly 44. Kropp controls this spacing by controlling the height dimension of protuberances 18, 19, 40, and 46, ("since the protuberance 18 and 19 each directly strike a side surface 32 of the electro optical component 2 with their highest points 20 and 21, a comparatively little-tolerance effected adjustment of the spacing B between the zone 4a and the lens 12a is assured," (column 4, lines 57-65) and contacting the proturbance on a surface of components 2 and 40. If a through-hole were provided as a solderable surface of the Kropp device, the spacing between components 2 and 40 and assemblies 10 and 44 would be much harder to control. Instead of being controlled straightforwardly by the height dimension of proturbance 18, 19, 40, and 46, the spacing would be controlled by a combination of the dimensions of annular rings 52 and the diameter of the proturbances. If the holes were large enough there would be no mechanical member whatsoever controlling the spacing B. Substituting a through-hole as a solderable in Kropp would destroy the functioning of the Kropp device wherein spacing is controlled by controlling the height dimension of proturbances. The skilled artisan, therefore, would not be motivated to make such a substitution because it would render the spacing B independent of height of a protuberance, and would destroy the operation of the Kropp device.

A skilled artisan also would not be motivated to substitute a threaded screw for a protuberance 18, 19, 40, and 46 of Kropp. As mentioned, Kropp sets out to tightly control the spacing B between the components 40 and 44 by controlling the height dimension of protuberances 18, 19, 40, and 46. In the case that a threaded screw were substituted for a proturbance of Kropp the spacing B would at best be

controlled by the combination of the height of the screw *and* the amount that the screw is screwed in. Because the skilled artisan would not want to make the task of controlling the spacing B more difficult, he would not want to substitute a threaded screw for a protuberance of the Kropp system.

Applicants also recite in claims 26 and 28 that the solderable surface configuration of applicants' optical and image sensor assembly can be provided by a pin 26 having a substantially uniform diametered body as shown by applicants' drawings, e.g. figures. 1A, 1B, and 1C. Because Kropp makes no suggestion for a pin having a substantially uniform-diametered body and provides no motivation for the incorporation of such a feature into the Kropp device, the element of a substantially uniform-diametered body pin is not obvious over Kropp.

Regarding claims 59 and 66, claims 59 and 66 are rejected over Kanaya. Kanaya at Fig. 7 shows an encoded data sensor 33 disposed to read slit pattern or magnetically encoded information from a rotating coded disk. Kenaya states that encoded data sensor 33 can be provided by, for example, "a photo-interrupter, a reflection type photo-electric sensor, or a magnetic sensor which senses the passage of the coded pattern when the motor is driven." (Kenaya, column 5, lines 8-11). Kanaya, however, fails to suggest anything that could be considered a sensor that can sense an image on a target. Therefore, applicants submit that Kenaya fails to suggest an "image sensor" as specifically set forth in applicants' claims, applicants believe that claims 59 and 66 are allowable over Kenaya.

Regarding claim 73, claim 73 is rejected over Christensen. Applicants have examined the putatively relevant sections of Christensen, yet fail to see the relevancy of Christensen to the claimed invention. The "solder bond" of Christensen is one that serves the limited purpose of bonding a lead-receiving socket to a printed circuit board 80. The "solder bond" of applicants claimed invention, by contrast bonds an optical subassembly to an image sensor subassembly. Applicants submit that there is no basis for the examiner's proposition that a socket 100 of Christensen, and a socket-receiving circuit board 80 of Christensen should be considered to be elements of different subassemblies, wherein one of the subassemblies is an optical subassembly and the other of the assemblies is an image sensor assembly. Both of the sockets 100 and the printed circuit board 80 are highly useful in supporting

Christensen's packaged integrated circuit comprising a photosensor array 40. Accordingly, both the sockets 100 and the circuit board 80 receiving the sockets can be considered elements of an image sensor subassembly. Therefore, Christensen fails to suggest the recited claim limitation of a solder bond which bonds an image sensor subassembly and an optical subassembly.

Furthermore, note that applicants' claims require that a solderable interface is defined between the "optical subassembly" and a "substantially rigid" planar member" of an image sensor subassembly. If the examiner is considering Christensen's circuit board 80 to be part of the optical assembly, examiner is respectfully requested to point out the element of Christensen which is considered to satisfy applicants' recited element of an image sensor subassembly rigid planar member, wherein a solder-receiving interface is defined.

Finally, applicants have added claims 95-108 in order to clarify and better set forth an embodiment of the invention. These new claims should be entered and substantially considered since, as indicated, the designation of the previous office action as "final" was improper.

Accordingly, in view of the above amendments and remarks, applicants believe all of the claims of the present application to be in condition for allowance and respectfully requests reconsideration and passage to allowance of the application.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned **"Version with markings to show changes made."**

If the Examiner believes that contact with applicants' attorney would be advantageous toward the disposition of this case, the Examiner is herein requested to call applicants' attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to deposit Account No. 50-0289.

Respectfully submitted,

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"VERSION WITH MARKINGS TO SHOW CHANGES MADE."

In the Claims:

1. (Twice Amended) A method for mounting an optical subassembly of an optical reading device to an image sensor subassembly of an optical device, said method comprising the steps of:

moving said optical subassembly and said image sensor subassembly in proximity with one another; and

[without a substantially rigid component part of said image sensor assembly being substantially benched in either of an x or y direction against a substantially rigid component part of said optical subassembly; and]

soldering said optical and image sensor assemblies together using a solder material, wherein immediately prior to said soldering step there is no contact between said optical subassembly and said image sensor subassembly that prevents free movement of said optical subassembly and said image sensor subassembly in either of the x or y directions.

11. (Twice Amended) The method of claim 1, further comprising the step of forming a first solderable surface on one of said subassemblies and a second solderable surface in said other of said subassemblies, wherein said first solderable surface is in made in the configuration of a pin driving a substantially uniform-diametered [pin] body, and said second solderable surface is made in the configuration of a through-hole, wherein said pin body has a diameter smaller than said hole to allow positional adjusting of said optical subassembly relative to said image sensor subassembly.

13. (Twice Amended) A method for mounting an optical subassembly to an image sensor subassembly, said method comprising the steps of:

forming at least one solderable surface on at least one of said optical and image sensor subassemblies;

moving said optical subassembly in proximity with said image sensor

subassembly to define an interface delimited by said at least one solderable surface of said optical subassembly or said image sensor subassembly; and

soldering said optical subassembly and said image sensor subassembly together at said interface, wherein said optical subassembly and said image sensor subassembly are configured so that said image sensor subassembly and said optical subassembly [are not substantially benched against one another] can be moved freely relative to one another in at least either of an x or y direction immediately prior to said soldering step.

22. (Twice Amended) The method of claim 13, wherein said forming step includes the step of making a first solderable surface in one of said subassemblies and a second solderable surface in said other of said subassemblies, wherein said first solderable surface is in made in the configuration of a pin having a substantially uniform-diametered [pin] body, and a said second solderable surface is made in the configuration of a through-hole having a diameter larger than said pin body.

26. (Twice Amended) An image sensor subassembly comprising:

a substantially rigid member;

an image sensor chip disposed on said substantially rigid member; and

a solderable surface formed on said substantially rigid member, said solderable surface being of a configuration selected from the group consisting of a through-hole, a pin having a substantially uniform-diametered [pin] body, or a threaded screw.

28. (Twice Amended) The image sensor subassembly of claim 26, wherein said solderable surface is made in the configuration of a through-hole.

29. (Twice Amended) The image sensor subassembly of claim 26, wherein said solderable surface is in the configuration of a pin having a substantially uniform-diametered [pin] body.

32. (Twice Amended) An optical subassembly comprising:

a substantially rigid member;

an optical element disposed on said substantially rigid member; and

a solderable surface formed on said substantially rigid member, said solderable surface being of a configuration selected from the group consisting of a through-hole, a pin having a substantially uniform-diametered body, or threaded screw.

34. (Twice Amended) The optical subassembly of claim 32, wherein said solderable surface is made in the configuration a through-hole.

35. (Twice Amended) The optical subassembly of claim 33, wherein said solderable surface is in the configuration of a pin having a substantially uniform-diameter body.

46. (Amended) A method for making an optical and image sensor assembly, said and image sensor assembly comprising an optical image sensor subassembly and an image sensor subassembly, said method comprising the steps of:

aligning said optical subassembly and said image sensor subassembly relative to one another without [substantially benching] contacting said optical subassembly and said image sensor subassembly against one another in a manner that prevents free movement of said assemblies relative to one another in either of the x direction or y directions; and

when said optical subassembly and said image sensor assembly are properly aligned, securing said optical subassembly and said image sensor subassembly together.